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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,740	02/08/2002	Junichi Hayashi	00862.022513	9290

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EXAMINER

DINH, MINH

ART UNIT PAPER NUMBER

2132

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/067,740

Applicant(s)

HAYASHI, JUNICHI

Examiner

Minh Dinh

Art Unit

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 22-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/11/02, 6/15/04, 9/21/04, 10/25/04, 12/21/04, 2/18/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-21, drawn to a method for embedding authentication information into a digital signal, the embedded authentication information being used later for authenticating the digital signal, classified in class 713, subclass 176.
 - II. Claims 22-37, drawn to a method for embedding information into a digital signal including the step of determining the embedding positions/locations, classified in class 382, subclass 100.
2. The inventions are distinct, each from the other because of the following reasons: Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as authentication using digital watermark. See MPEP § 806.05(d).
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

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4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Brian Klock on 09/14/2005 a provisional election was made with traverse to prosecute the invention of group I, claims 1-21.

Affirmation of this election must be made by applicant in replying to this Office action.

Claims 22-37 are withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

Information Disclosure Statement

7. The information disclosure statements filed 06/18/2004 and 08/17/2004 fail to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the

examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statements have been placed in the application file, but the information referred to therein has not been considered

8. The reference US Pat. No. 6,693,965 listed in the IDS filed 02/28/2005 is not considered because the corresponding inventor's name in the IDS does not match the inventor's name printed in the issued patent.

Specification

9. The abstract of the disclosure is objected to because it contains more than one paragraph. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-15, 18 and 20 are rejected under 35 U.S.C. 101 because they are directed to non-statutory subject matter.

Regarding claim 1, it is directed to an apparatus for embedding authentication information into digital information. However, the specification discloses that the functionalities of the apparatus recited in claim 1 can be implemented in software (page 35, lines 12-16). Therefore, claim 1 is not tangibly embodied as it is only software per

se. It is suggested that the language of claim 1 include a CPU and/or a storage device (fig. 1).

Claim 8 is rejected on the same basis as claim 1.

Regarding claim 18, it is not tangibly embodied as it is only software per se. It is suggested that the limitation of claim 19 be put into claim 18.

Claim 20 is rejected on the same basis as claim 18.

Claims that are not specifically addressed are rejected by virtue of their dependency.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claim 11 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for decrypting the first authentication information (i.e., the digital signature) and comparing the decrypted first authentication information (original hash) with the second authentication information (generated hash) (figure 3), does not reasonably provide enablement for decrypting the second authentication information (generated hash) and comparing the decrypted second authentication information with the first authentication information. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The second authentication (a hash value of the received digital information) is

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generated by the party authenticating the received digital information, and therefore, is used directly for comparison without being encrypted and then decrypted. The limitation is interpreted as "wherein said comparison means compares information obtained decrypting the first authentication information with the second authentication information"

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 3-4 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 3-4 and 11 recites the limitation "the digital signature" in lines 2, 3 and 2 respectively. There is insufficient antecedent basis for this limitation in the claim. The limitation is interpreted as "a digital signature".

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

16. Claims 1-4, 7-12 and 15-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Honsinger et al (6,278,791).

Honsinger discloses a method and system for embedding meta-data such as a digital signature of an into the image such that the signature can be removed from the image later to allow lossless recovery of the original image and that the signature can be used to verify the authenticity of the received image (Abstract).

Regarding claims 1-4, 16 and 18-19, Honsinger discloses an apparatus comprising: means for generating a digital signature of the image to which the digital signature is to be embedded; means for acquiring the digital signature and the image; means for embedding the digital signature into the image as a digital watermark; and means for outputting the watermarked image (fig. 4).

Regarding claims 8-12, 17 and 20-21, Honsinger discloses an apparatus comprising: means for extracting a digital signature embedded as the digital watermark from an image; means for removing the digital signature from the image as the digital watermark, and restoring tentative original image; means for generating a hash value of the restored tentative original image; and means for comparing the original hash value from the extracted signature with the generated hash value to determine if the received image has been tampered with (fig. 5).

Regarding claims 7 and 15, Honsinger further discloses that other meta-data is also embedded, meta-data other than a digital signature being information regarding date, time, an apparatus or a person (fig. 4, element 46; col. 1, line 66 – col. 2, line 3).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 5-6 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honsigner as applied to claims 1 and 8 above, and further in view of Schneider ("Applied Cryptography"). Honsigner discloses using a digital signature as the authentication information. Honsigner does not disclose using MAC as the authentication information. Schneier disclose using MAC as authentication information (p. 31 Message Authentication Code). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Honsigner apparatus to use MAC as the authentication information, as taught by Schneier. The motivation for doing so would have been that only someone with the same key that is used to generate the MAC could verify the hash value.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,606,609 to Houser et al.

U.S. Patent No. 5,912,972 to Barton

U.S. Patent No. 6,611,599 to Natarajan
Fridrich et al, "Invertible Authentication"

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dinh whose telephone number is 571-272-3802. The examiner can normally be reached on Mon-Fri: 10:00am-6:30pm.

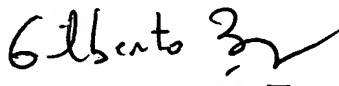
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)..

MD

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Examiner
Art Unit 2132

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9/17/05


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